NRCS Natural Resources Conservation Service

Utah Water Supply Outlook Report

January, 2006

East Fork of Blacks Fork Snow Course, north slope of the Uinta Mountains.
Photo by Randy Julander, NRCS, USDA .

Water Supply Outlook Reports
and Federal - State - Private Cooperative Snow Surveys

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How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snowcourses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

STATE OF UTAH GENERAL OUTLOOK
Jan 1, 2006

SUMMARY
What a difference a year makes! Last year as you recall, brought unbelievable snowpacks to southern Utah and the Uintah Basin. This year, snowpacks in the south are but a pitiful 16% of what they were last year. That is still 40% of average but a far cry from that record setting year. In the Uintah Basin, snowpacks are a respectable 105% of average, a good year to be sure, but far from spectacular. Winter of 2006 thus-far has seen a climatic pattern that has favored northern Utah over its southern counterpart, a reversal of last year's pattern. Snowpacks on the Bear, Weber and Provo range from 123% to 141% of average. The late summer and fall of 2005 were very warm and dry. This combination has reduced soil moisture values in water producing areas substantially compared to last year, 11% to 43% less. The Provo (28% less), southeast Utah (28% less) and southwest Utah (43% less) have the greatest overall reduction in soil moisture values compared to last year. Overall, soil moisture values range from 27% to 55% of saturation in the upper 24 inches of soil. The mild temperatures that have occurred over most of this winter have impacted lower elevation snowpacks, even in the north. These lower elevations typically have values ranging from 60% to 100% of normal, or as low as 16% in the southern areas. Precipitation for December was much above normal at 147%. Northern Utah ranged from 134% to 181% and southern Utah had 77% to 137% of average. This brings the seasonal precipitation, (Oct-Dec) to 107%. Low reservoir storage is becoming less of a concern with total reservoir storage at 65% of capacity, up 27% from last year. The area of greatest drought concern is the Bear River with current reservoir storage at only 22% of capacity. In general, most areas of the state have excellent reservoir carryover. General water supply conditions are near average and have been improving over the past year. Streamflow forecasts range from 21% to 123% of average. Surface Water Supply Indices range from 21% on the Bear River, to 84% on the Provo.

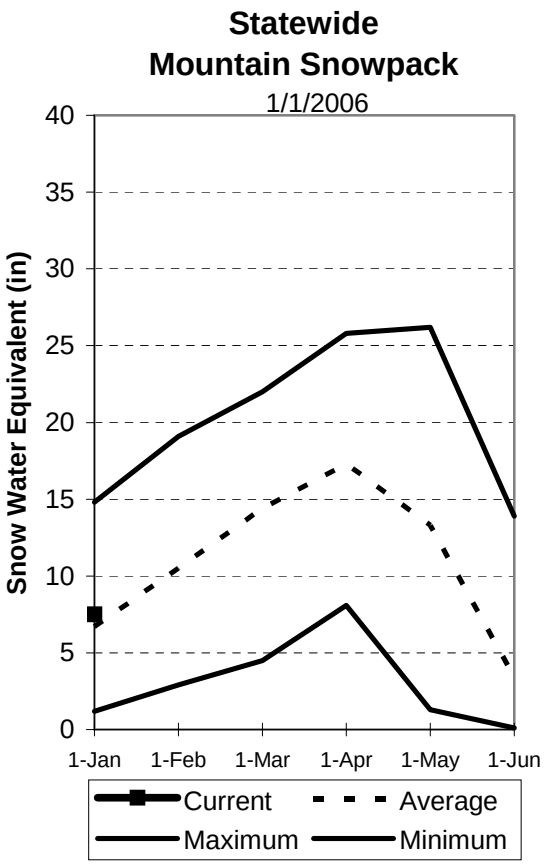
SNOWPACK
January first snowpacks as measured by the NRCS SNOTEL system range from 40% in southwest Utah to 141% on the Bear River Watershed, a complete reversal of last year. Northern snowpacks are similar or in the case of the Bear, higher than last year. Low elevation snowpacks are below normal pretty much statewide. Snowpacks also tend to have higher densities than a typical January, due to the mild temperatures and relatively warm storms. While there is still a large portion of winter yet to come and any outcome is still possible, this could be another decent water supply year.

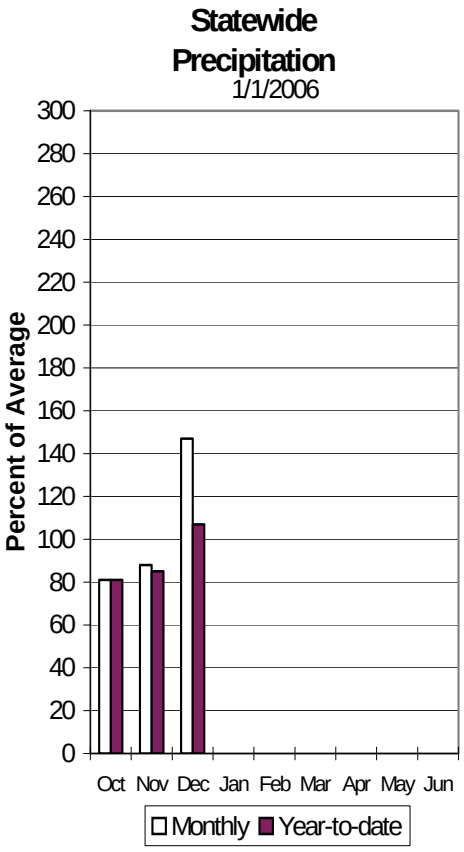
PRECIPITATION
Mountain precipitation during December was 147% of average statewide. Precipitation was lower in southern Utah (77%) and much higher in the north (181%). This brings the seasonal accumulation (Oct-Dec) to 107% of average statewide. A dry fall and early winter has reduced soil moisture values considerably and this could negatively impact spring runoff.

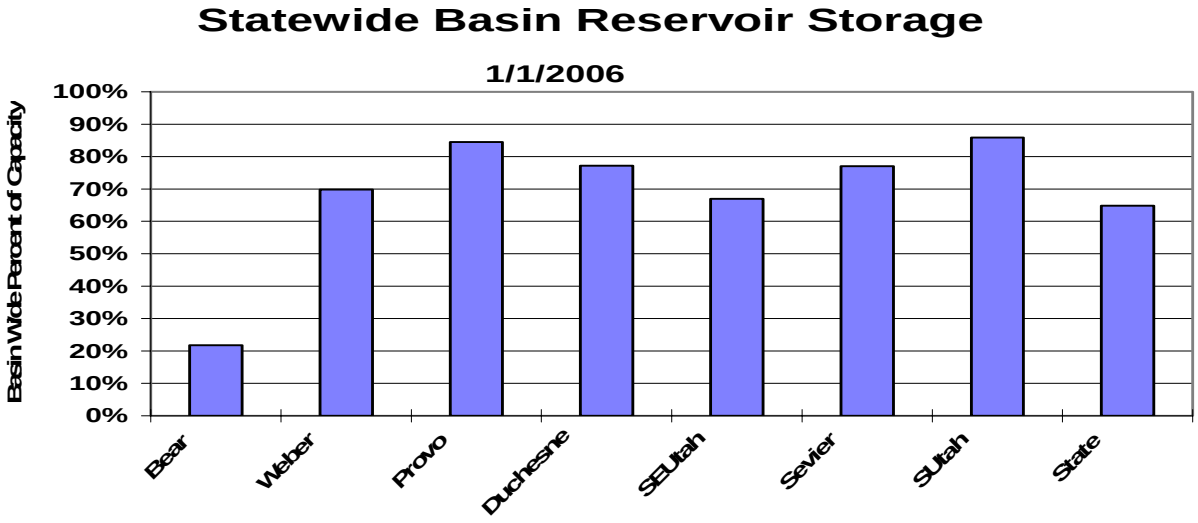
RESERVOIRS
Storage in 41 of Utah’s key irrigation reservoirs is at 65% of capacity. This is an increase of 27% from last year. Reservoirs across the State have been making steady gains in storage. Bear Lake really is the last reservoir to remain in an extremely low condition due to the prolonged drought. Some of the other large reservoirs such as Utah Lake (97%) and Strawberry (76%) have made significant recoveries.

STREAMFLOW

Snowmelt streamflows are expected to be below average to above average across the state of Utah this year. Forecast streamflows range from 21% on Recapture Creek near Blanding to 123% of average for East Canyon Inflow. Most flows are forecast to be in the 60% to 110% range. Overall water supply conditions are improving.

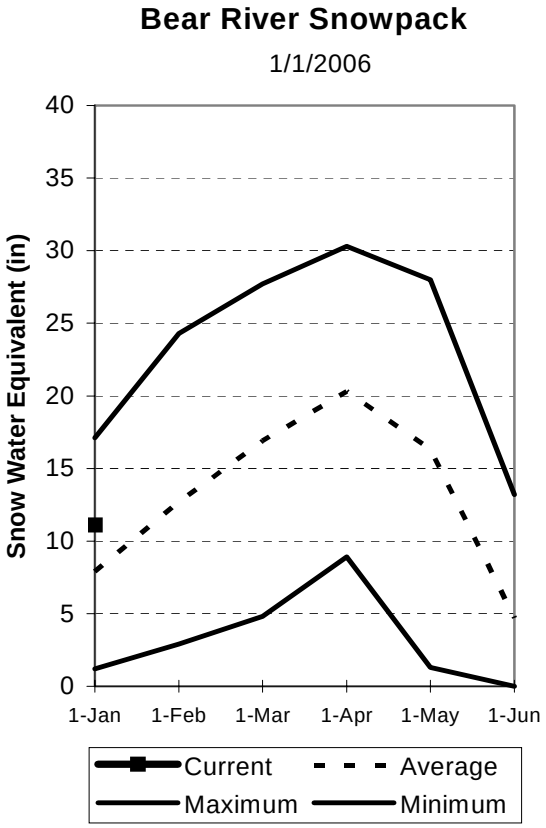


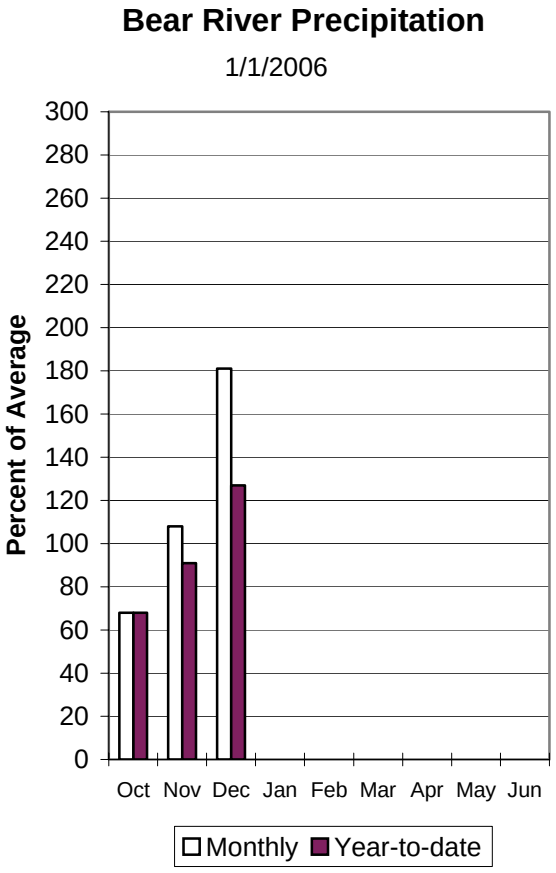


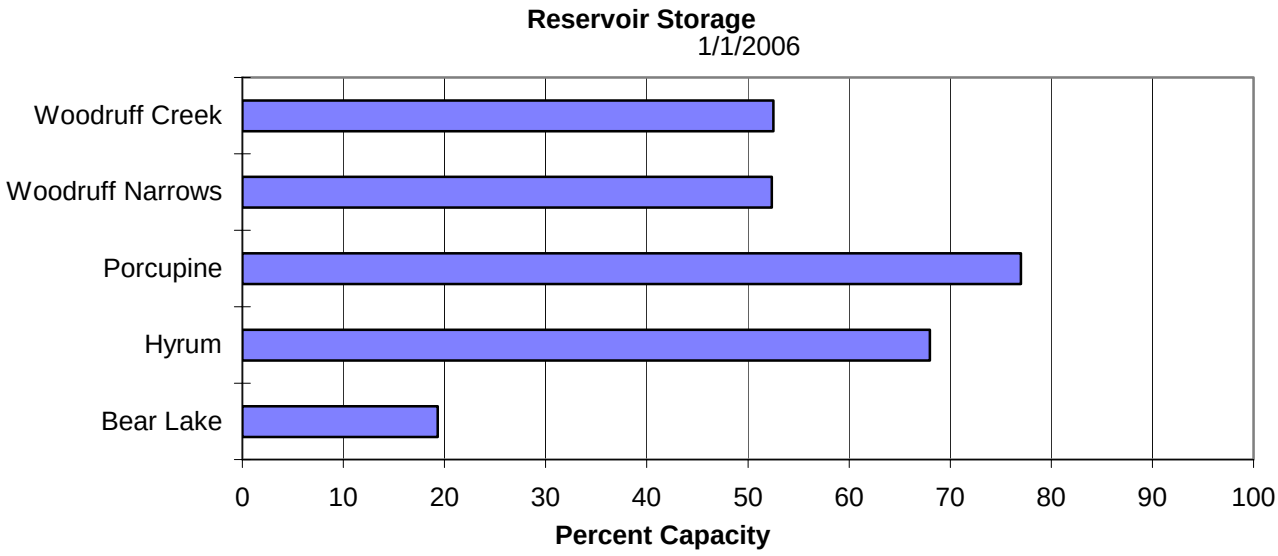


Bear River Basin
Jan 1, 2006

Snowpacks on the Bear River Basin are much above average at 141% of normal, about 125% of last year. This is the best snowpack on the Bear since 1997! Specific sites range from 98% to 163% of normal. December precipitation was much above average at 181%, which brings the seasonal accumulation (Oct-Dec) to 127% of average. Soil moisture levels in runoff producing areas are at 55% of saturation in the upper 2 feet of soil compared to 64% last year. Forecast streamflows range from near to above average (98%-115%) volumes this spring. Reservoir storage is extremely low at 22% of capacity, 20% more than last year. The Surface Water Supply Index is at 21% for the Bear River, or 79% of years have had more total water available. Water supply conditions are much below normal due to low reservoir storage but improved significantly over last few years.







BEAR RIVER BASIN
Streamflow Forecasts - January 1, 2006

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Bear River nr UT-WY State Line	APR-JUL	85	108	124	110	140	163	113
Bear River ab Reservoir nr Woodruff	APR-JUL	88	125	150	110	175	210	136
Big Creek nr Randolph	APR-JUL	1.5	3.2	4.8	98	6.7	10.1	4.9
Smiths Fork nr Border	APR-JUL	83	105	120	117	135	157	103
Bear River at Stewart Dam	APR-JUL	153	216	265	113	319	408	234
Little Bear River at Paradise	APR-JUL	25	38	48	104	60	79	46
Logan R Abv State Dam Nr Logan	APR-JUL	83	113	136	108	161	202	126
Blacksmith Fk Abv Up&L Dam Nr Hyrum	APR-JUL	31	45	55	115	67	86	48

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1302.0	251.8	0.0	---
HYRUM	15.3	10.4	7.3	10.2
PORCUPINE	11.3	8.7	6.5	3.9
WOODRUFF NARROWS	57.3	30.0	12.0	23.6
WOODRUFF CREEK	4.0	2.1	1.5	---

BEAR RIVER BASIN
Watershed Snowpack Analysis - January 1, 2006

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
BEAR RIVER, UPPER (abv Ha	5	112	139
BEAR RIVER, LOWER (blw Ha	8	132	142
LOGAN RIVER	4	126	144
RAFT RIVER	1	173	174
BEAR RIVER BASIN	13	124	141

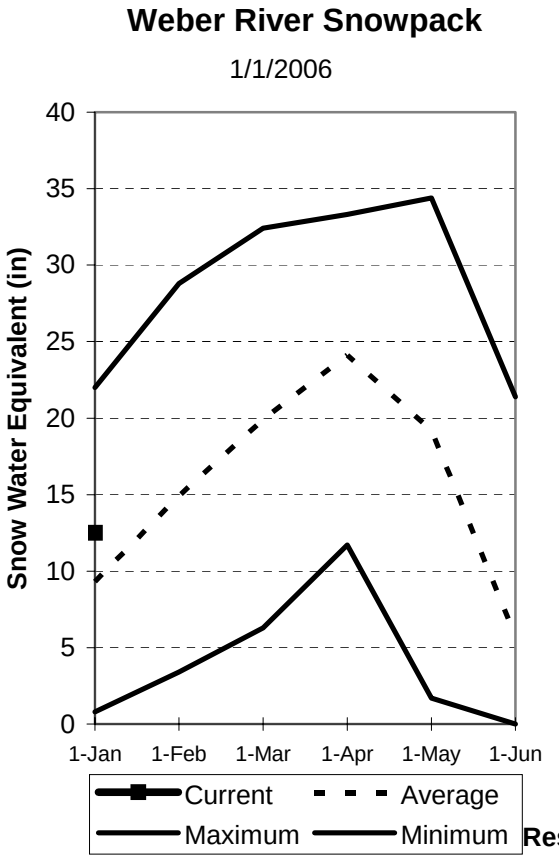
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

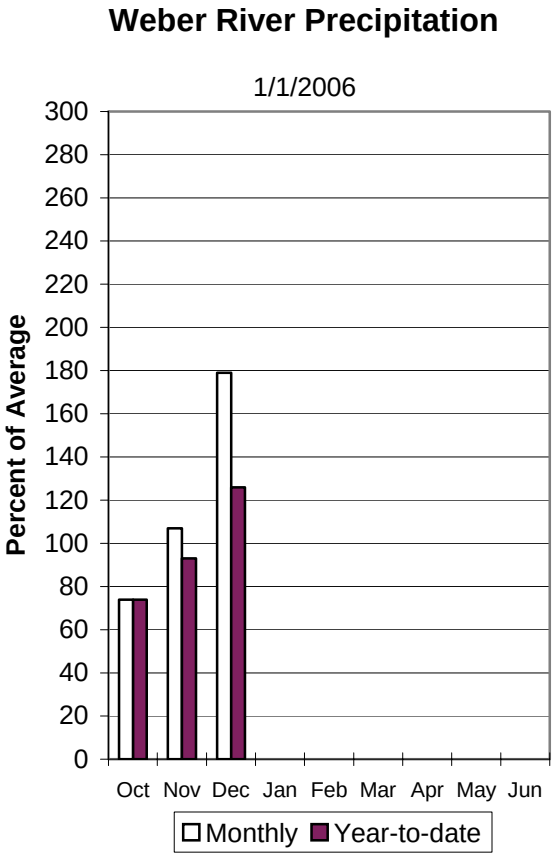
The average is computed for the 1971-2000 base period.

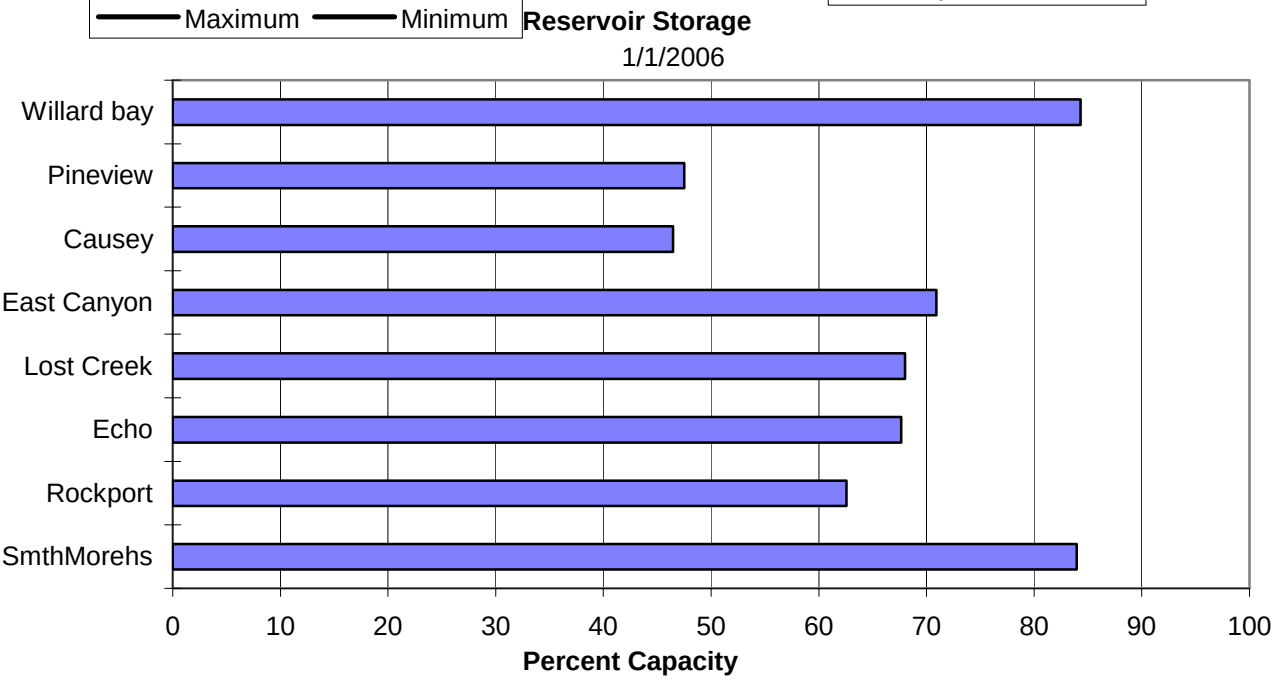
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Weber and Ogden River Basins
Jan 1, 2006

Snowpack on the Weber and Ogden Watersheds is much above normal at 134%, about 96% of last year. Individual sites range from 97% to 180% of average. December precipitation was much above average at 179% bringing the seasonal accumulation (Oct-Dec) to 126% of average. Soil moisture levels in runoff producing areas are at 52% of saturation in the upper 2 feet of soil compared to 66% last year. Streamflow forecasts range from 104% to 120% of average. Reservoir storage is at 70% of capacity, about 27% more than last year. The Surface Water Supply Index is at 83% for the Weber River and at 57% for the Ogden River. Overall water supply conditions are near to above normal and improving.







WEBER & OGDEN WATERSHEDS in Utah
Streamflow Forecasts - January 1, 2006

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Smith & Morehouse Res inflow	APR-JUL	26	32	37	109	42	48	34
Weber River nr Oakley	APR-JUL	97	122	137	111	152	177	123
Rockport Resv Inflow Nr Wanship	APR-JUL	96	131	151	113	171	206	134
Weber River nr Coalville	APR-JUL	103	133	158	115	183	213	137
Chalk Creek at Coalville	APR-JUL	22	37	47	104	57	72	45
Echo Reservoir inflow	APR-JUL	129	169	199	111	229	269	179
Lost Creek Reservoir inflow	APR-JUL	8.5	14.0	18.4	105	24	32	17.6
East Canyon Reservoir inflow	APR-JUL	23	31	38	123	45	57	31
Weber River at Gateway	APR-JUL	285	365	425	120	485	565	355
SF Ogden River nr Huntsville	APR-JUL	39	57	69	108	81	99	64
Pineview Reservoir inflow	APR-JUL	86	119	142	107	165	198	133
Wheeler Creek nr Huntsville	APR-JUL	4.3	6.3	7.3	116	8.3	10.3	6.3

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WEBER & OGDEN WATERSHEDS in Utah
Reservoir Storage (1000 AF) - End of December

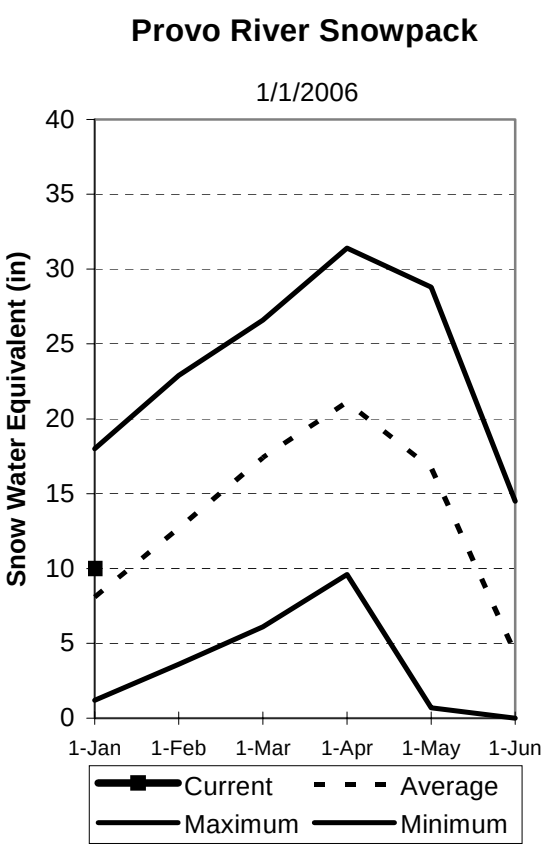
Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
CAUSEY	7.1	3.3	3.3	2.8
EAST CANYON	49.5	35.1	33.7	34.9
ECHO	73.9	50.0	33.1	47.9
LOST CREEK	22.5	15.3	5.2	14.1
PINEVIEW	110.1	52.3	65.6	52.9
ROCKPORT	60.9	38.1	40.7	36.2
WILLARD BAY	215.0	181.3	47.0	147.7

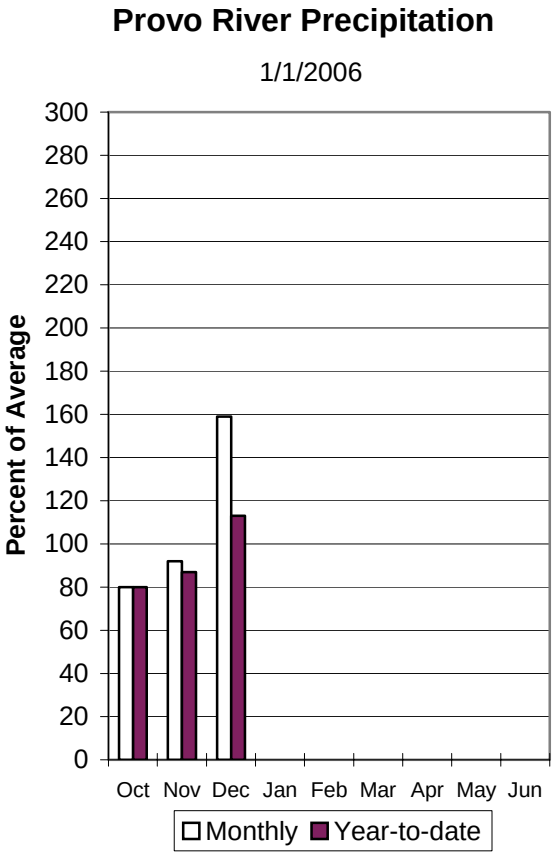
WEBER & OGDEN WATERSHEDS in Utah
Watershed Snowpack Analysis - January 1, 2006

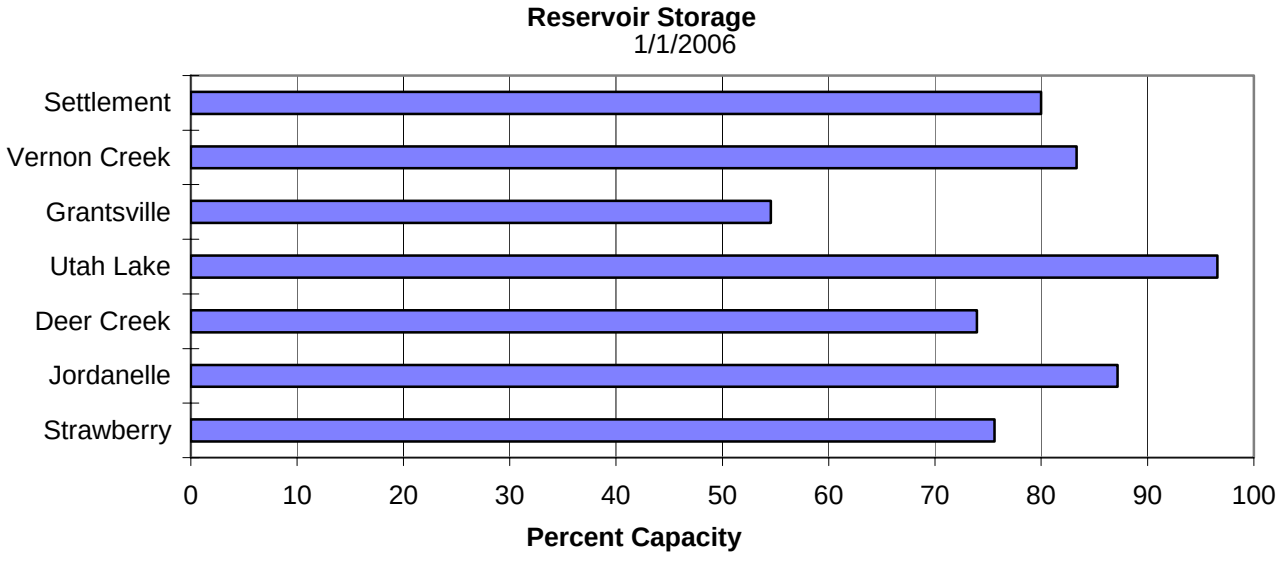
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
OGDEN RIVER	4	96	124
WEBER RIVER	9	96	140
WEBER & OGDEN WATERSHEDS	13	96	134

Utah Lake, Jordan River & Tooele Valley Basins
Jan 1, 2006

Snowpacks over these watersheds are above average at 123%, 91% of last year. Individual sites range from 68% to 179% of average. December precipitation was much above average at 159%, bringing the seasonal accumulation (Oct-Dec) to 113% of average. Soil moisture levels in runoff producing areas are at 43% of saturation in the upper 2 feet of soil compared to 71% last year. Forecast streamflows range from 72% to 118% of average. Reservoir storage is at 84% of capacity, 26% more than last year. The Surface Water Supply Index is at 84%, or only 16% of years would have more total water available. General water supply conditions are near normal and improving.







UTAH LAKE, JORDAN RIVER & TOOELE VALLEY
Streamflow Forecasts - January 1, 2006

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Spanish Fork River nr Castilla	APR-JUL	36	60	84	109	108	132	77
Provo River nr Woodland	APR-JUL	68	102	116	113	130	152	103
Provo River nr Hailstone	APR-JUL	68	108	125	115	142	170	109
Deer Creek Resv Inflow	APR-JUL	62	121	148	118	175	215	126
American Fk Abv Upper Powerplant	APR-JUL	19.2	30	36	113	42	53	32
Utah Lake inflow	APR-JUL	146	279	355	109	431	535	325
Little Cottonwood Ck nr SLC	APR-JUL	29	37	42	105	47	55	40
Big Cottonwood Ck nr SLC	APR-JUL	26	35	40	105	45	54	38
Mill Creek nr SLC	APR-JUL	3.7	6.0	7.1	101	8.2	10.5	7.0
Parley's Creek nr SLC	APR-JUL	6.8	16.5	17.0	102	17.5	27	16.7
Dell Fork nr SLC	APR-JUL	2.3	5.0	6.8	100	8.6	11.4	6.8
Emigration Creek nr SLC	APR-JUL	1.1	3.5	4.9	109	6.3	8.7	4.5
City Creek nr SLC	APR-JUL	4.1	7.1	8.9	102	10.7	13.7	8.7
Vernon Creek nr Vernon	APR-JUL	0.5	0.8	1.1	72	1.4	2.1	1.5
Settlement Creek Abv Resv Nr Tooele	APR-JUL	0.5	1.1	1.7	79	2.3	3.4	2.1
South Willow Creek nr Grantsville	APR-JUL	1.0	2.1	2.8	87	3.5	4.6	3.2

UTAH LAKE, JORDAN RIVER & TOOELE VALLEY
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DEER CREEK	149.7	110.7	95.2	102.0
GRANTSVILLE	3.3	1.8	1.5	1.6
SETTLEMENT CREEK	1.0	0.8	0.6	0.5
STRAWBERRY-ENLARGED	1105.9	836.0	735.3	640.0
UTAH LAKE	870.9	841.1	384.6	756.5
VERNON CREEK	0.6	0.5	0.4	---

UTAH LAKE, JORDAN RIVER & TOOELE VALLEY
Watershed Snowpack Analysis - January 1, 2006

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
PROVO RIVER & UTAH LAKE	7	101	123
PROVO RIVER	4	103	138
JORDAN RIVER & GREAT SALT	6	102	136
TOOELE VALLEY WATERSHEDS	3	52	82
UTAH LAKE, JORDAN RIVER &	16	94	123

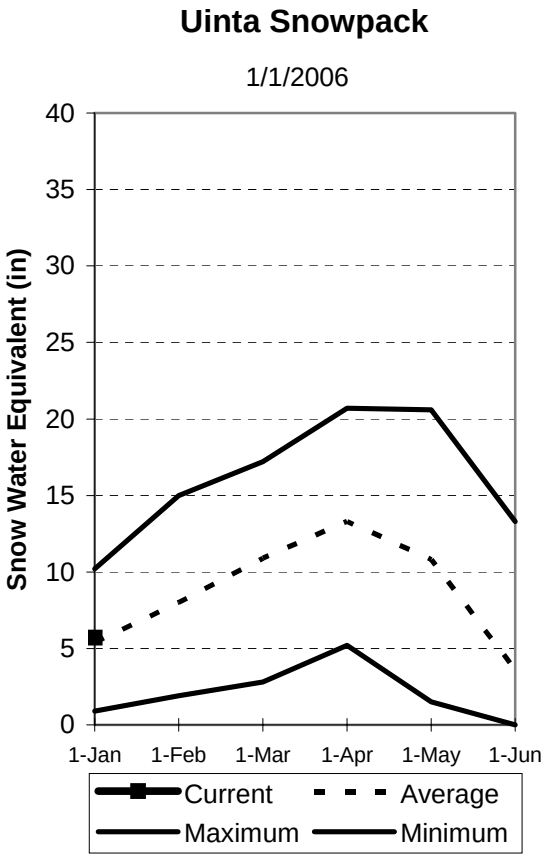
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

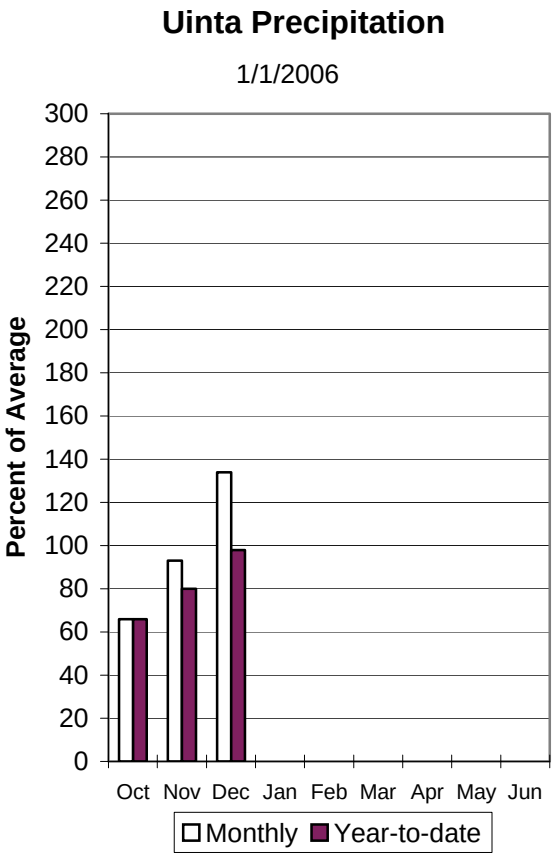
The average is computed for the 1971-2000 base period.

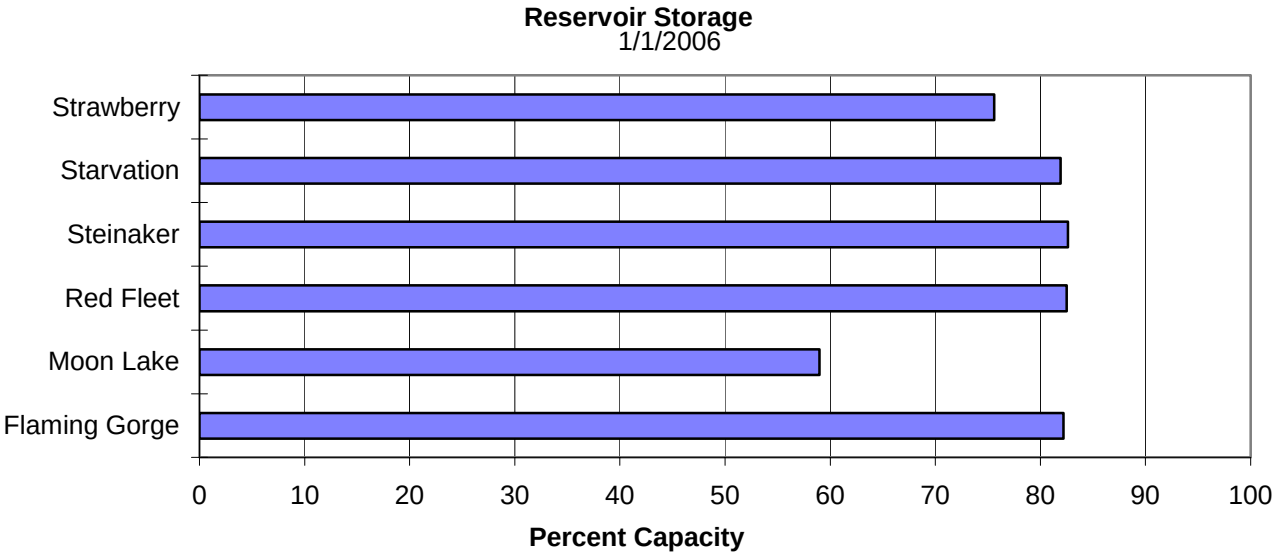
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Uintah Basin and Dagget SCD's
Jan 1, 2006

Snowpacks across the Uintah Basin and North Slope areas are near average at 105%, which is 61% of last year. The North Slope ranges from 48% to 129% and the Uintah Basin ranges from 72% to 141% of average. Precipitation during December was much above average at 134% bringing the seasonal accumulation (Oct-Dec) to 98% of average. Soil moisture values in runoff producing areas are at 35% of saturation in the upper 2 feet of soil compared to 55% last year. Reservoir storage is at 77% of capacity, 10% more than last year. The Surface Water Supply Index for the western area is 79% and for the eastern area it is 50% indicating above normal conditions on the west side and average for the eastern area. Streamflow forecasts range between 81% and 118% of average. General water supply conditions are near average.







UINTAH BASIN & DAGGET SCD'S
Streamflow Forecasts - January 1, 2006

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Blacks Fork nr Robertson	Apr-Jul	70	90	104	110	120	144	95
EF of Smiths Fork nr Robertson	Apr-Jul	21	27	32	110	37	45	29
Flaming Gorge Reservoir Inflow (2)	Apr-Jul	774	1060	1280	108	1520	1912	1190
Big Brush Ck abv Red Fleet Resv	Apr-Jul	10.3	14.7	18.2	87	22	28	21
Ashley Creek nr Vernal	Apr-Jul	23	34	42	81	52	67	52
WF Duchesne River nr Hanna (2)	Apr-Jul	17.5	24	28	117	33	41	24
Duchesne R nr Tabiona (2)	Apr-Jul	76	101	120	114	141	174	105
Upper Stillwater Resv Inflow	Apr-Jul	67	82	94	115	106	126	82
Rock Ck nr Mountain Home (2)	Apr-Jul	74	92	105	118	119	142	89
Duchesne R abv Knight Diversion (2)	Apr-Jul	145	185	215	114	247	299	188
Strawberry R nr Soldier Springs (2)	Apr-Jul	28	48	65	110	84	117	59
Currant Creek Reservoir Inflow (2)	Apr-Jul	11.0	20	28	112	37	53	25
Strawberry R nr Duchesne (2)	Apr-Jul	58	95	125	103	160	218	121
Lake Fork River Moon Lake Inflow	Apr-Jul	55	68	78	115	88	104	68
Yellowstone River nr Altonah	Apr-Jul	42	54	64	103	75	91	62
Duchesne R at Myton (2)	Apr-Jul	139	230	305	117	391	536	260
Whiterocks near Whiterocks	Apr-Jul	29	40	49	88	59	75	56
Duchesne R nr Randlett (2)	Apr-Jul	152	260	350	108	453	630	324

UINTAH BASIN & DAGGET SCD'S
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
FLAMING GORGE	3749.0	3082.0	2741.0	3027.0
MOON LAKE	49.5	29.2	17.2	26.1
RED FLEET	25.7	21.2	15.4	17.5
STEINAKER	33.4	27.6	14.6	20.0
STARVATION	165.3	135.4	123.4	128.6
STRAWBERRY-ENLARGED	1105.9	836.0	735.3	640.0

UINTAH BASIN & DAGGET SCD'S
Watershed Snowpack Analysis - January 1, 2006

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
UPPER GREEN RIVER in UTAH	6	60	89
ASHLEY CREEK	2	27	53
BLACK'S FORK RIVER	2	112	118
SHEEP CREEK	1	32	48
DUCHESNE RIVER	11	61	112
LAKE FORK-YELLOWSTONE CRE	4	61	121
STRAWBERRY RIVER	4	77	110
UINTAH-WHITEROCKS RIVERS	2	33	82
UINTAH BASIN & DAGGET SCD	17	61	105

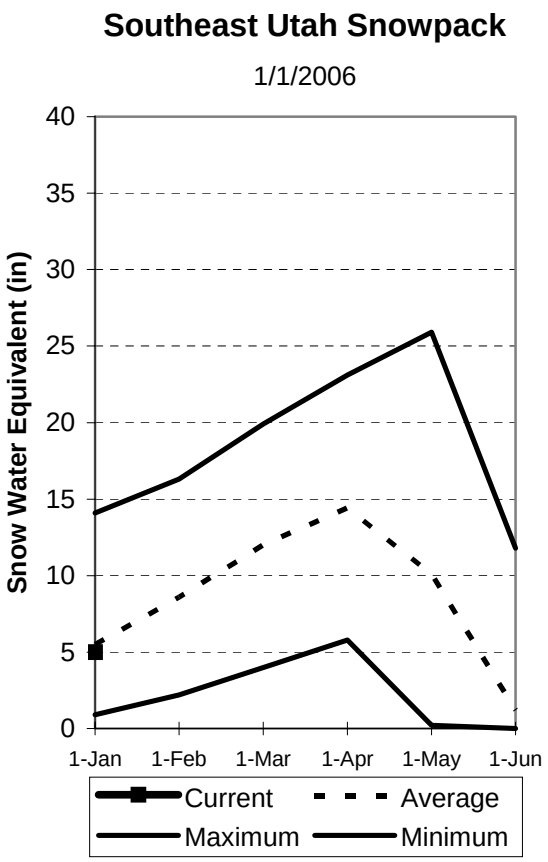
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

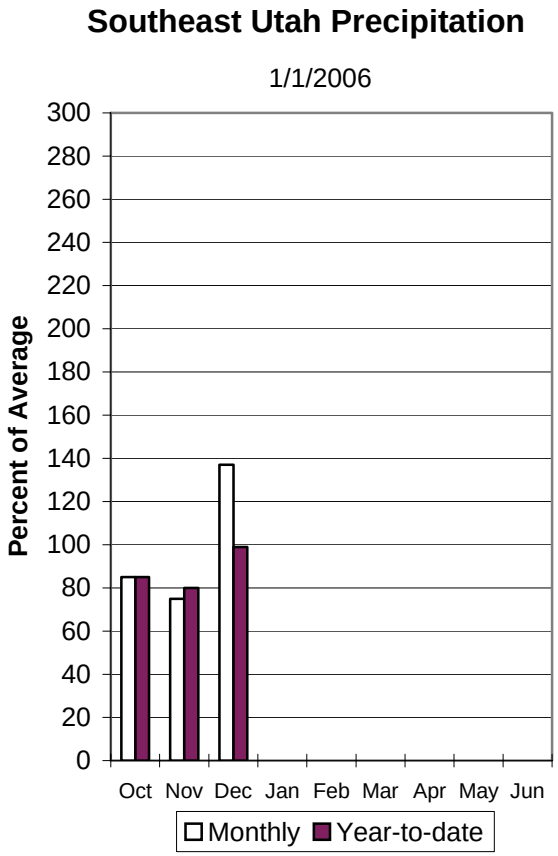
The average is computed for the 1971-2000 base period.

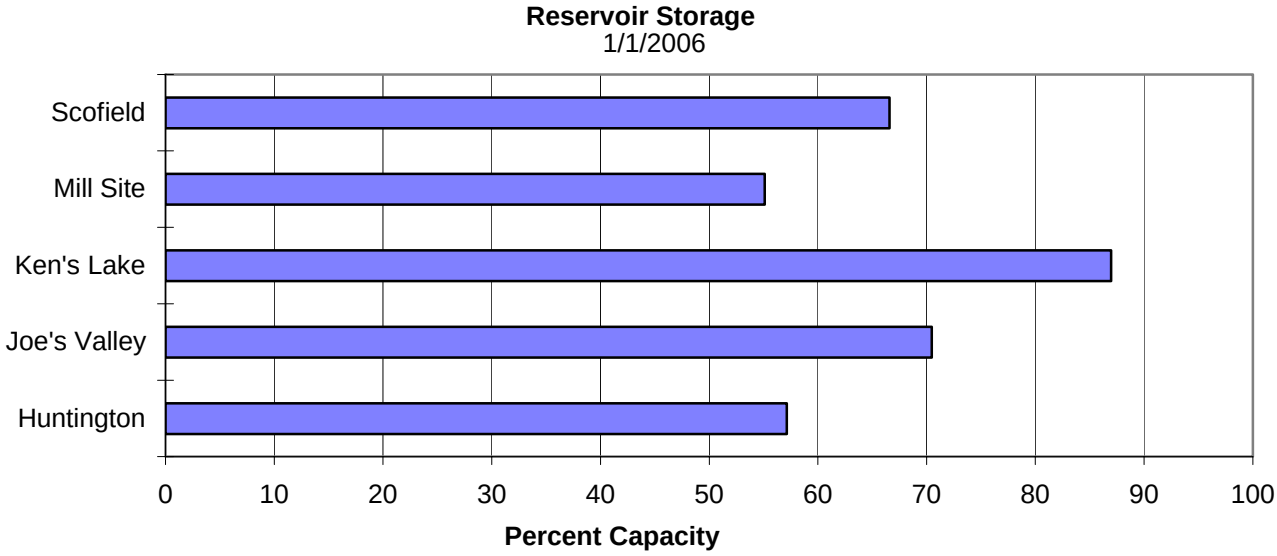
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Carbon, Emery, Wayne, Grand and San Juan Co.
Jan 1, 2006

Snowpacks in this region are near normal at 91% of average, about 65% of last year. Southeastern areas are much drier at 14% to 81% of normal. Individual sites range from 14% to 115% of average. Precipitation during December was much above average at 137%, bringing the seasonal accumulation (Oct-Dec) to 99% of normal. Soil moisture estimates in runoff producing areas are at 32% of saturation in the upper 2 feet of soil compared to 60% last year. Forecast streamflows range from 81% to 121% of average. Reservoir storage is at 67% of capacity, up 32% from last year. Surface Water Supply Indices for the area are: Price 82%, (above normal) San Rafael area 74% (above average) and Moab 48% (near average). General runoff and water supply conditions are near normal.







CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.
Streamflow Forecasts - January 1, 2006

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Gooseberry Creek nr Scofield	Apr-Jul	7.5	10.3	12.5	105	14.9	18.8	11.9
Price River near Scofield Reservoir	Apr-Jul	23	37	46	102	56	69	45
White River blw Tabbyune Creek	Apr-Jul	8.1	13.5	18.0	104	23	32	17.3
Green River at Green River, UT (2)	Apr-Jul	2030	2960	3600	114	4240	5170	3170
Huntington Ck Inflow to Electric Lk	Apr-Jul	7.9	12.2	15.7	100	19.6	26	15.7
Huntington Ck nr Huntington	APR-JUL	23	37	49	98	63	75	50
Joe's Valley Resv Inflow	Apr-Jul	36	50	61	105	73	92	58
Ferron Ck (Upper Station) nr Ferron	Apr-Jul	25	34	41	105	48	60	39
Colorado River Near Cisco (2)	Apr-Jul	2840	4250	5200	112	6150	7560	4650
Mill Creek at Sheley Tunnel nr Moab	Apr-Jul	1.9	3.0	4.0	80	5.2	7.4	5.0
Seven Mile Ck nr Fish Lake	Apr-Jul	3.3	4.7	5.7	81	6.8	8.7	7.0
Muddy Creek nr Emery	Apr-Jul	9.9	14.5	18.2	92	22	29	19.9
South Ck ab Lloyd's Res nr Monticell	Mar-Jul	0.0	0.1	0.3	22	0.6	1.3	1.4
Recapture Ck Bl Johnson Ck nr Blandi	Mar-Jul	0.1	0.4	1.1	21	2.1	4.7	5.0
San Juan River near Bluff (2)	Apr-Jul	310	570	850	69	1130	1540	1230

CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNTINGTON NORTH	4.2	2.4	2.2	2.4
JOE'S VALLEY	61.6	43.4	35.3	41.0
KEN'S LAKE	2.3	2.0	0.3	1.0
MILL SITE	16.7	9.2	8.5	75.0
SCOFIELD	65.8	43.8	7.0	32.7

CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.
Watershed Snowpack Analysis - January 1, 2006

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
PRICE RIVER	3	94	115
SAN RAFAEL RIVER	3	97	114
MUDDY CREEK	1	95	107
FREMONT RIVER	3	26	57
LASAL MOUNTAINS	1	68	81
BLUE MOUNTAINS	1	9	14
WILLOW CREEK	1	23	31
CARBON, EMERY, WAYNE, GRA	13	65	91

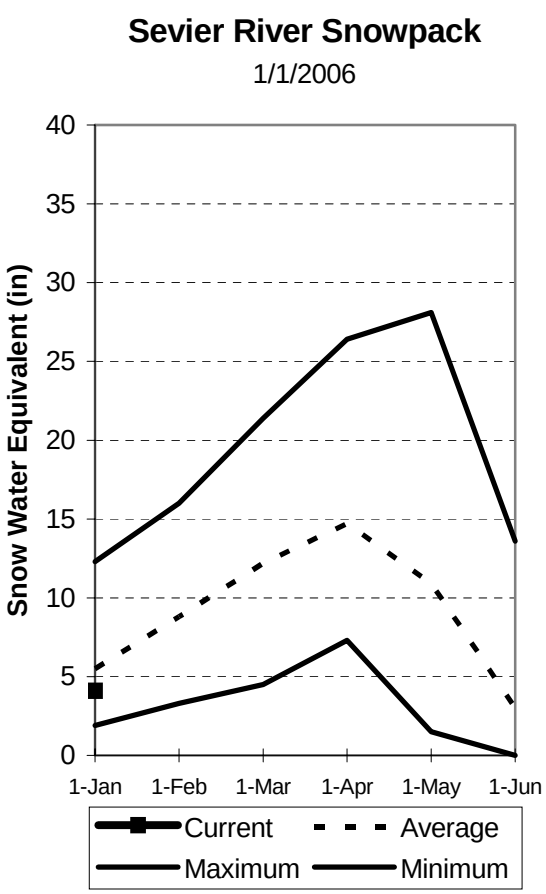
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

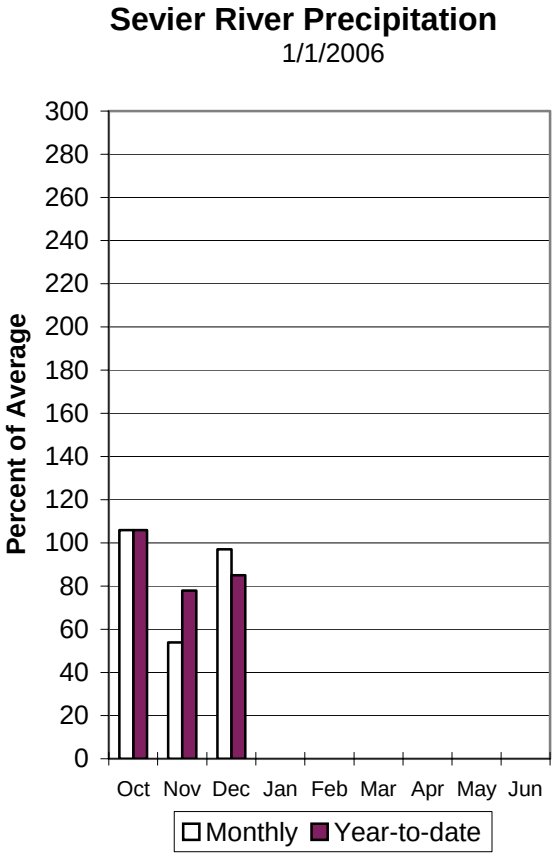
The average is computed for the 1971-2000 base period.

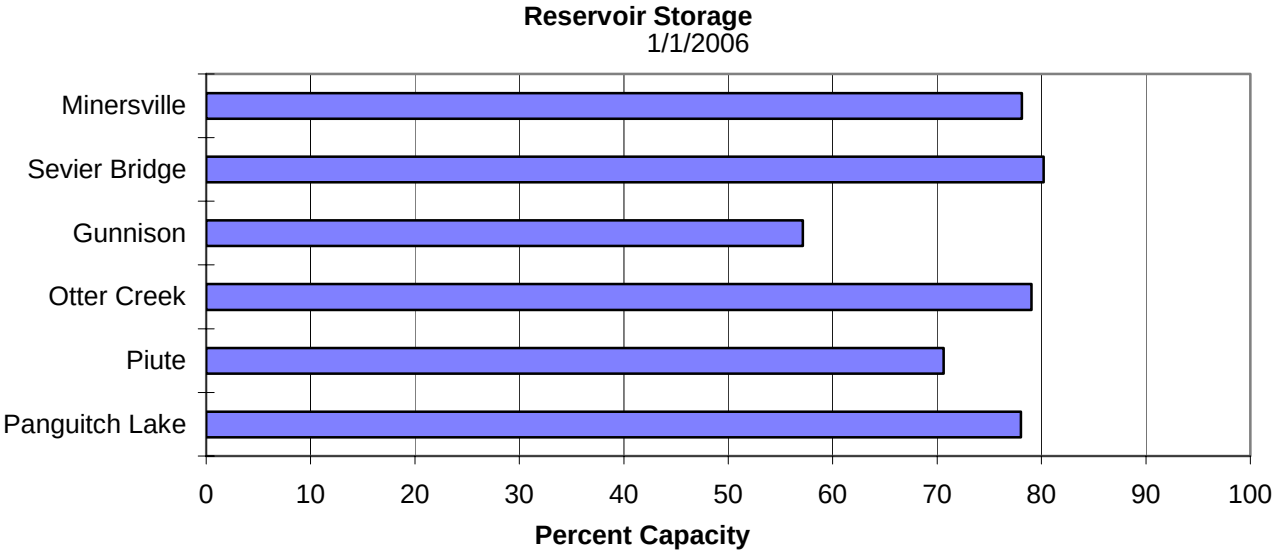
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Sevier and Beaver River Basins
Jan 1, 2006

Snowpacks on the Sevier River Basin are below normal at 74% of average, about 43% of last year. Individual sites range from 20% to 125% of average. Precipitation during December was near average at 97% of normal, bringing the seasonal accumulation (Oct-Dec) to 85% of average. Soil moisture estimates in runoff producing areas are at 44% of saturation (Sevier) in the upper 2 feet of soil compared to 62% last year. Streamflow forecasts range from 42% to 96% of average. Reservoir storage is at 77% of capacity, 59% more than last year. Surface Water Supply Indices are: Upper Sevier 49%, Lower Sevier 48% and Beaver 53%. Water supply conditions are near average due to excellent reservoir carryover.







SEVIER & BEAVER RIVER BASINS
Streamflow Forecasts - January 1, 2006

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Sevier River at Hatch	APR-JUL	12.6	30	40	73	57	78	55
Sevier River nr Kingston	APR-JUL	21	42	62	70	82	118	89
EF Sevier R nr Kingston	APR-JUL	7.6	20	26	68	37	52	38
Clear Creek Abv Diversions Nr Sevier	APR-JUL	2.0	10.9	16.0	73	21	30	22
Salina Creek at Salina	APR-JUL	0.0	4.7	8.6	44	17.4	31	19.7
Manti Ck Blw Dugway Ck Nr Manti	APR-JUL	10.4	14.4	17.5	96	21	26	18.3
Sevier R nr Gunnison	APR-JUL	28	151	170	61	254	385	280
Chicken Creek nr Levan	APR-JUL	0.6	1.5	2.5	56	3.8	6.4	4.5
Oak Creek nr Oak City	APR-JUL	0.5	0.9	1.2	70	1.5	2.0	1.7
Beaver River nr Beaver	APR-JUL	13.2	18.1	22	82	26	34	27
Minersville Reservoir inflow	APR-JUL	1.1	3.9	6.9	42	10.7	17.8	16.6

SEVIER & BEAVER RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
GUNNISON	20.3	11.6	1.1	10.9
MINERSVILLE (RkyFd)	23.3	18.2	5.0	12.7
OTTER CREEK	52.5	41.5	10.7	32.8
PIUTE	71.8	50.7	18.0	42.1
SEVIER BRIDGE	236.0	189.3	37.9	148.9
PANGUITCH LAKE	22.3	17.4	6.5	108.0

SEVIER & BEAVER RIVER BASINS
Watershed Snowpack Analysis - January 1, 2006

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
UPPER SEVIER RIVER (south	8	21	54
EAST FORK SEVIER RIVER	3	22	56
SOUTH FORK SEVIER RIVER	5	21	52
LOWER SEVIER RIVER (inclu	6	90	92
BEAVER RIVER	2	51	79
SEVIER & BEAVER RIVER BAS	16	41	74

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

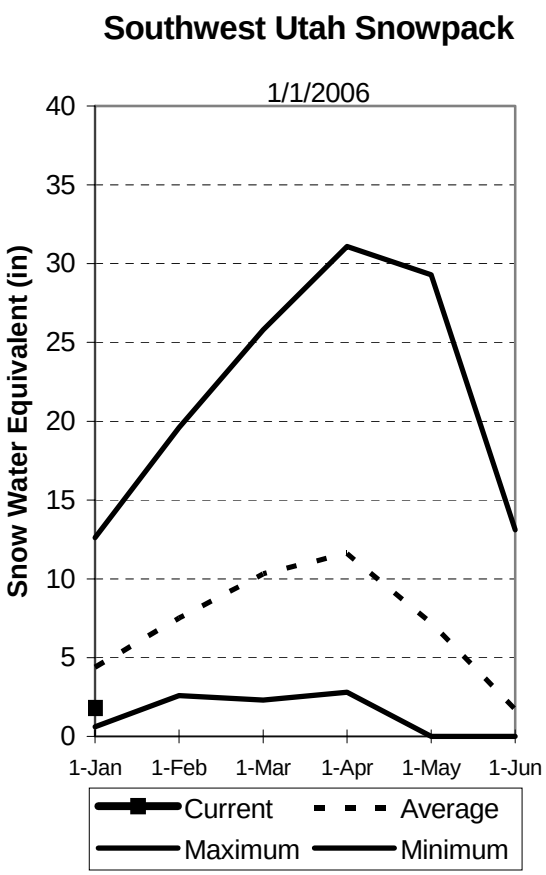
The average is computed for the 1971-2000 base period.

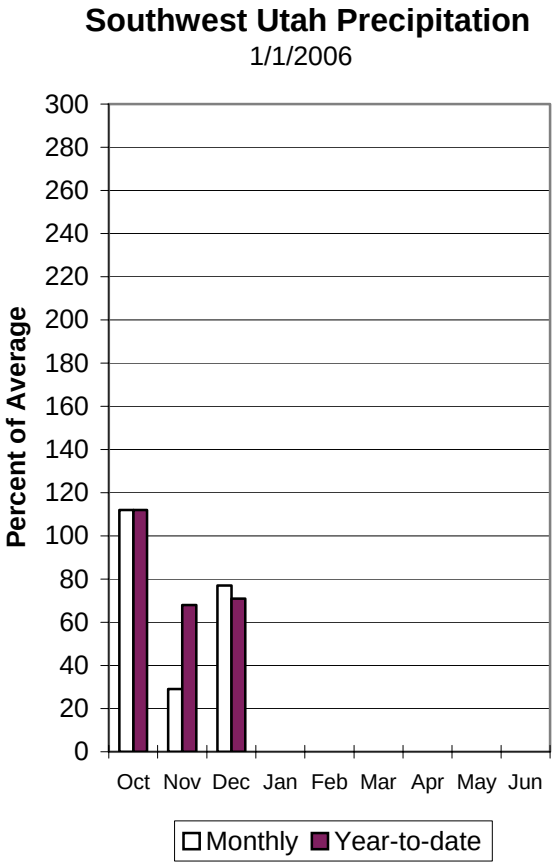
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

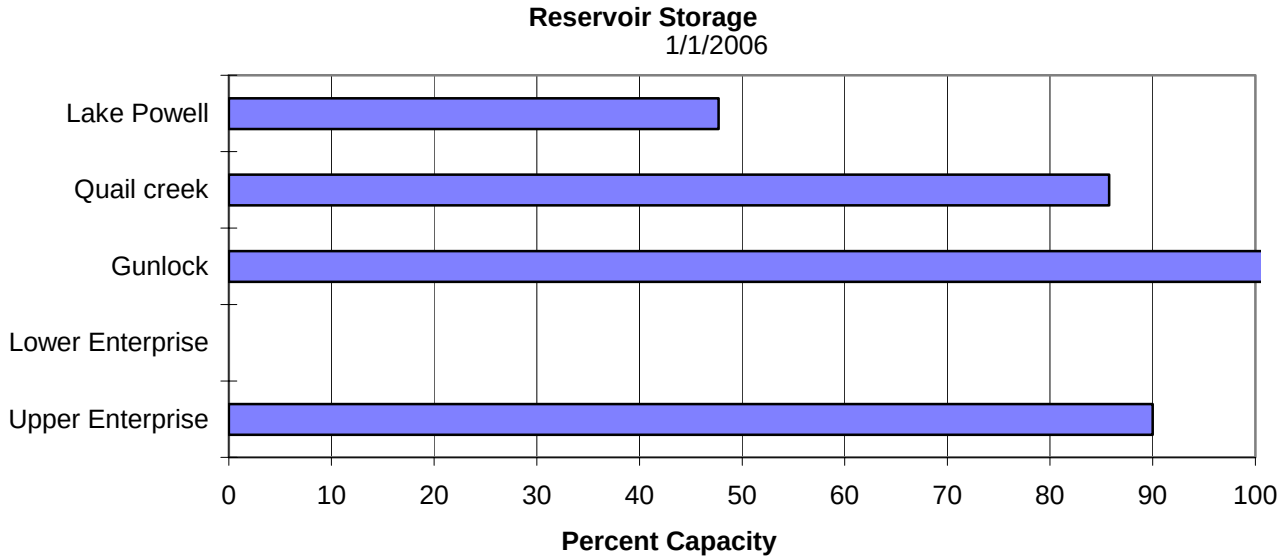
E. Garfield, Kane, Washington, & Iron co.

Jan 1, 2006

Snowpacks in this region are much below normal at 40% of average, about 16% of last year. Individual sites range from 19% to 53% of average. Precipitation was below normal during December at 77% of average, bringing the seasonal accumulation (Oct-Dec) to 71% of normal. Soil moisture estimates in runoff producing areas are at 27% of saturation in the upper 2 feet of soil compared to 70% last year. Forecast streamflows range from 44% to 58% of average. Reservoir storage is at 86% of capacity, 27% more than last year. The Surface Water Supply Index is at 52%, indicating near normal water availability.







E. GARFIELD, KANE, WASHINGTON, & IRON Co.
Streamflow Forecasts - January 1, 2006

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Lake Powell Inflow (2)	APR-JUL	4900	7040	8500	107	9960	12100	7930
Virgin River at Virgin	Apr-Jul	15.4	18.9	31	48	46	74	64
Virgin River near Hurricane	APR-JUL	11.0	17.3	30	44	51	91	69
Santa Clara River nr Pine Valley	APR-JUL	0.9	1.8	3.2	58	5.1	8.6	5.5
Coal Creek nr Cedar City	APR-JUL	4.6	8.8	12.5	65	16.8	24	19.3

E. GARFIELD, KANE, WASHINGTON, & IRON Co.
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
GUNLOCK	10.4	10.8	10.4	5.7
LAKE POWELL	24322.0	11604.0	8665.0	---
QUAIL CREEK	40.0	34.3	25.6	23.9
UPPER ENTERPRISE	10.0	9.0	5.0	---
LOWER ENTERPRISE	2.6	0.0	2.0	26.7

E. GARFIELD, KANE, WASHINGTON, & IRON Co.
Watershed Snowpack Analysis - January 1, 2006

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
VIRGIN RIVER	5	16	43
PAROWAN	2	16	55
ENTERPRISE TO NEW HARMONY	2	25	37
COAL CREEK	2	17	50
ESCALANTE RIVER	2	16	35
E. GARFIELD, KANE, WASHIN	9	18	40

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

UTAH SURFACE WATER SUPPLY INDEX

Snow Surveys Basin or Region January, 2006	NRCS SWSI/%	USDA Percentile	Years with Similar SWSI
Bear River	-2.4	21%	95,02,90,62
Ogden River	0.6	57%	96,95,79,05
Weber River	2.7	83%	74,80,85,95
Provo	2.8	84%	73,98,75,69
West Uintah Basin	2.4	79%	05,01,00,99
East Uintah Basin	0	50%	82,96,00,97
Price River	2.6	82%	58,68,75,96
San Rafael	2.0	74%	93,79,97,85
Moab	-0.1	48%	82,91,94,97
Upper Sevier River	-0.1	49%	76,75,01,74
Lower Sevier River	-0.2	48%	76,89,71,96
Beaver River	0.3	53%	96,78,74,81
Virgin River	0.2	52%	86,87,99,01

Snow Surveys

245 N Jimmy Doolittle Rd
Salt Lake City, UT
(801) 524-5213

SWSI Scale: -4 to 4
Percentile: 0 - 100%

What is a Surface Water Supply Index?

The Surface Water Supply Index (SWSI) is a predictive indicator of total surface water availability within a watershed for the spring and summer water use seasons. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow which are based on current snowpack and other hydrologic variables. SWSI values are scaled from +4.1 (abundant supply) to -4.1 (extremely dry) with a value of zero (0) indicating media water supply as compared to historical analysis. SWSI's are calculated in this fashion to be consistent with other hydroclimatic indicators such as the Palmer Drought Index and the Precipitation index.

Utah Snow Surveys has also chosen to display the SWSI as a PERCENT CHANCE OF NON-EXCEEDANCE. While this is a very cumbersome name, it has the simplest application. It can be best thought of as a simple scale of 1 to 99 with 1 being the drought of record (driest possible conditions) and 99 being the flood of record (wettest possible conditions) and a value of 50 representing average conditions. This rating scale is a percentile rating as well, for example a SWSI of 75% means that this years water supply is greater than 75% of all historical events and that only 25% of the time has it been exceeded. Conversely a SWSI of 10% means that 90% of historical events have been greater than this one and that only 10% have had less total water supply. This scale is far more intuitive for most people and is totally comparable between basins: a SWSI of 50% means the same relative ranking on watershed A as it does on watershed B, which may not be strictly true of the +4 to -4 scale.

For more information on the SWSI go to: www.ut.nrcs.usda.gov/snow/ on the water supply page. The entire period of historical record for reservoir storage and streamflow is available.

DATA CURRENT AS OF:01/05/06 13:03:59

S N O W C O U R S E D A T A

JANUARY 2006

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
AGUA CANYON SNOTEL	8900	1/01	7	1.4	7.4	2.9
ALTA CENTRAL	8800	12/29	69	19.4	20.2	16.5
BEAVER DAMS SNOTEL	8000	1/01	18	4.4	3.4	4.3
BEAVER DIVIDE SNOTEL	8280	1/01	40	8.4	4.9	4.7
BEN LOMOND PK SNOTEL	8000	1/01	65	19.0	22.4	14.5
BEN LOMOND TR SNOTEL	6000	1/01	33	9.9	8.6	8.5
BEVAN'S CABIN	6450				-	4.2
BIG FLAT SNOTEL	10290	1/01	30	6.5	12.6	7.6
BIRCH CROSSING	8100				-	2.8
BLACK FLAT-U.M. CK S	9400	1/01	20	4.0	5.8	3.8
BLACK'S FORK GS-EF	9340				-	3.3
BLACK'S FORK JUNCTN	8930				-	3.7
BOX CREEK SNOTEL	9800	1/01	18	4.3	9.4	5.3
BRIAN HEAD	10000				-	8.2
BRIGHTON SNOTEL	8750	1/01	52	13.7	13.7	10.9
BRIGHTON CABIN	8700	12/29	50	12.7	13.4	11.5
BROWN DUCK SNOTEL	10600	1/01	53	10.1	17.0	7.7
BRYCE CANYON	8000				5.8	2.1
BUCK FLAT SNOTEL	9800	1/01	34	8.9	8.3	7.2
BUCK PASTURE	9700				-	-
BUCKBOARD FLAT	9000				-	5.4
BUG LAKE SNOTEL	7950	1/01	49	10.4	8.8	8.3
BURT'S-MILLER RANCH	7900				-	2.2
CAMP JACKSON SNOTEL	8600	1/01	7	.8	9.0	5.6
CASCADE MOUNTAIN SNO	7770	1/01	41	9.2	8.9	-
CASTLE VALLEY SNOTEL	9580	1/01	18	2.8	12.6	4.9
CHALK CK #1 SNOTEL	9100	1/01	58	13.9	12.9	10.1
CHALK CK #2 SNOTEL	8200	1/01	33	6.5	7.3	6.7
CHALK CREEK #3	7500				-	3.5
CHEPETA SNOTEL	10300	1/01	25	4.3	15.4	6.0
CLAYTON SPRINGS SNTL	10000	1/01	13	2.3	11.7	-
CLEAR CK RIDG #1 SNT	9200	1/01	43	8.9	9.6	7.7
CLEAR CK RIDG #2 SNT	8000	1/01	32	5.4	4.6	6.0
CORRAL	8200				-	-
CURRANT CREEK SNOTEL	8000	1/01	33	5.7	5.8	4.2
DANIELS-STRAWBERRY S	8000	1/01	43	7.8	9.0	6.5
DILL'S CAMP SNOTEL	9200	1/01	30	5.9	6.2	5.5
DONKEY RESERVOIR SNO	9800	1/01	9	1.6	6.9	4.0
DRY BREAD POND SNTL	8350	1/01	48	10.5	12.1	9.1
DRY FORK SNOTEL	7160	1/01	20	6.0	4.0	6.9
EAST WILLOW CREEK SN	8250	1/01	7	.9	3.9	2.9
FARMINGTON U. SNOTEL	8000	1/01	68	18.9	24.5	13.0
FARMINGTON LOWER SC	6950				-	10.4
FARMINGTON L. SNOTEL	6780	1/01	34	10.2	11.6	-
FARNSWORTH LK SNOTEL	9600	1/01	27	5.7	9.9	8.0
FISH LAKE	8700				-	2.9
FIVE POINTS LAKE SNO	10920	1/01	47	8.5	14.9	7.0
G.B.R.C. HEADQUARTER	8700				-	-
G.B.R.C. MEADOWS	10000				-	9.7
GARDEN CITY SUMMIT	7600				-	6.5
GARDNER PEAK SNOTEL	8350	1/01	10	2.4	8.9	-
GEORGE CREEK	8840				-	-
GOOSEBERRY R.S.	8400				-	5.1
GOOSEBERRY R.S. SNTL	7900	1/01	14	3.7	3.3	3.6
GUTZ PEAK SNOTEL	6820	1/01	2	.4	8.9	-
HARDSCRABBLE SNOTEL	7250	1/01	40	11.7	9.8	6.5
HARRIS FLAT SNOTEL	7700	1/01	3	.5	5.2	2.5
HAYDEN FORK SNOTEL	9100	1/01	46	9.7	8.5	6.3
HENRY'S FORK	10000				-	-
HEWINTA SNOTEL	9500	1/01	26	5.3	3.8	4.1
HICKERSON PARK SNTL	9100	1/01	11	1.4	4.4	2.9
HIDDEN SPRINGS	5500	12/28	10	3.1	2.0	.2
HOBBLE CREEK SUMMIT	7420				-	6.1
HOLE-IN-ROCK SNOTEL	9150	1/01	17	3.7	3.9	2.7
HORSE RIDGE SNOTEL	8260	1/01	57	13.2	12.3	9.3
HUNTINGTON-HORSESHOE	9800				-	9.7
INDIAN CANYON SNOTEL	9100	1/01	20	3.9	9.0	4.4
JOHNSON VALLEY	8850				-	2.7

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
JONES CORRAL G.S.	9720				-	-
KILFOIL CREEK	7300				-	5.5
KILLYON CANYON	6300	12/29	18	4.8	2.7	5.1
KIMBERLY MINE SNOTEL	9300	1/01	18	3.9	7.2	6.0
KING'S CABIN SNOTEL	8730	1/01	16	2.4	9.4	5.0
KLONDIKE NARROWS	7400				-	7.5
KOLOB SNOTEL	9250	1/01	18	2.5	16.6	6.9
LAKEFORK #1 SNOTEL	10100	1/01	34	5.4	11.8	5.6
LAKEFORK BASIN SNTL	10900	1/01	58	10.6	12.8	8.2
LAKEFORK MOUNTAIN #3	8400				-	2.8
LAMBS CANYON	7400	12/28	29	7.3	7.4	7.4
LASAL MOUNTAIN LOWER	8800				-	3.8
LASAL MOUNTAIN SNTL	9850	1/01	10	3.8	5.6	4.7
LIGHTNING RIDGE SNTL	8220	1/01	49	10.9	9.6	-
LILY LAKE SNOTEL	9050	1/01	36	6.8	6.2	5.5
LITTLE BEAR LOWER	6000				-	4.3
LITTLE BEAR SNOTEL	6550	1/01	15	5.1	5.3	5.2
LITTLE GRASSY SNOTEL	6100	1/01	1	.4	2.8	2.1
LONG FLAT SNOTEL	8000	1/01	6	1.4	4.5	2.8
LONG VALLEY JCT. SNT	7500	1/01	4	.7	2.9	1.8
LOOKOUT PEAK SNOTEL	8200	1/01	68	16.5	15.2	9.9
LOST CREEK RESERVOIR	6130				-	2.0
LOUIS MEADOW SNOTEL	6700	1/01	37	11.4	8.3	-
MAMMOTH-COTTONWD SNT	8800	1/01	40	9.5	8.3	7.6
MERCHANT VALLEY SNTL	8750	1/01	19	3.8	7.5	5.4
MIDDLE CANYON	7000				-	5.9
MIDWAY VALLEY SNOTEL	9800	1/01	22	4.8	33.7	9.0
MILL CREEK	6950	12/28	27	7.3	6.8	8.3
MILL-D NORTH SNOTEL	8960	1/01	54	14.3	16.0	10.3
MILL-D SOUTH FORK	7400	12/29	40	10.4	8.0	8.6
MINING FORK SNOTEL	8000	1/01	28	6.8	12.7	5.5
MONTE CRISTO SNOTEL	8960	1/01	60	14.0	14.1	11.0
MOSBY MTN. SNOTEL	9500	1/01	27	4.8	12.3	5.1
MT.BALDY R.S.	9500				-	9.9
MUD CREEK #2	8600				-	5.3
OAK CREEK	7760				-	-
PANGUITCH LAKE R.S.	8200				-	-
PARLEY'S CANYON SNTL	7500	1/01	34	8.9	7.2	7.2
PARRISH CREEK SNOTEL	7740	1/01	47	12.1	12.7	-
PAYSON R.S. SNOTEL	8050	1/01	28	6.9	7.4	7.2
PICKLE KEG SNOTEL	9600	1/01	26	7.0	5.4	6.2
PINE CREEK SNOTEL	8800	1/01	24	5.3	9.4	8.8
RED PINE RIDGE SNTL	9200	1/01	39	7.7	7.5	6.7
REDDEN MINE LOWER	8500				-	6.7
REES'S FLAT	7300				-	5.6
ROCK CREEK SNOTEL	7900	1/01	29	5.2	4.8	3.7
ROCKY BN-SETTLEMT SN	8900	1/01	32	6.8	12.6	10.0
SEELEY CREEK SNOTEL	10000	1/01	22	6.5	8.1	6.4
SMITH MOREHOUSE SNTL	7600	1/01	33	7.4	6.4	5.7
SNOWBIRD SNOTEL	9700	1/01	82	20.3	25.1	13.2
SPIRIT LAKE	10300				-	5.5
SQUAW SPRINGS	9300				-	3.2
STEEL CREEK PARK SNO	10100	1/01	36	7.4	7.5	6.7
STILLWATER CAMP	8550				-	3.9
STRAWBERRY DIVIDE SN	8400	1/01	42	7.4	8.5	7.4
SUSC RANCH	8200				-	2.8
TALL POLES	8800				-	5.3
TEMPLE FORK SNOTEL	7410	1/01	44	10.2	8.4	-
THAYNES CANYON SNTL	9200	1/01	57	12.8	18.1	9.0
THISTLE FLAT	8500				-	-
TIMBERLINE	9100				-	-
TIMPANOGOS DIVIDE SN	8140	1/01	53	10.7	13.7	9.2
TONY GROVE LK SNOTEL	8400	1/01	90	23.3	18.0	14.3
TONY GROVE R.S.	6250				-	5.0
TRIAL LAKE	9960				-	9.8
TRIAL LAKE SNOTEL	9960	1/01	74	15.6	13.8	10.5
TROUT CREEK SNOTEL	9400	1/01	14	2.5	8.8	4.2
UPPER JOES VALLEY	8900				-	4.1
VERNON CREEK SNOTEL	7500	1/01	16	2.3	5.1	4.0
VIPONT	7670				-	-
WEBSTER FLAT SNOTEL	9200	1/01	14	2.7	10.6	6.0
WHITE RIVER #1 SNTL	8550	1/01	34	5.2	7.3	5.2
WHITE RIVER #3	7400				-	3.5
WIDTSOE #3 SNOTEL	9500	1/01	10	1.3	13.8	4.4
WRIGLEY CREEK	9000				-	4.3
YANKEE RESERVOIR	8700				-	3.7

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Utah Water Supply Outlook Report

Natural Resources Conservation Service
Salt Lake City, UT